WHAT IS CLAIMED IS:

1. A method for momentarily heating a surface of a mold, comprising the steps of:

opening upper and lower molds and first and second cores of the mold, and supplying gaseous fuel;

injecting and igniting the gaseous fuel from the upper and lower molds after allowing the upper and lower molds to come close to each other at a predetermined distance;

heating the core for a predetermined time period;

filling a forming space between the upper and lower molds with molten material through the upper mold, immediately after stopping heating, closing the upper and lower molds and the core and allowing the molded product to cool for a predetermined time period;

cooling the core and a molded product for a predetermined time period by spraying cooling water on the core and the molded product after allowing the upper and lower molds to be opened away from the core at predetermined distances; and

ejecting the molded product from the upper and lower molds after allowing the upper and lower molds and the core to be completely opened.

2. The method according to claim 1, wherein said predetermined time period for which the core is heated is in a range of 1 to 60 seconds, said predetermined distances between the upper mold and the first core, between the first and second cores and between the second core and the lower mold while the core is heated are in a range of 1 to 40 cm, said predetermined time period for which the core and the molded product are cooled in the closed mold is in a range of 5 to 300 seconds, said predetermined time period for which the core and the molded product are cooled by cooling water is in the range of 5 to 30 seconds and said predetermined distances between the upper mold and the first core

and between the second core and the lower mold while the core and the molded product are cooled by the cooling water are in a range of 1 to 400 mm.

3. A method for momentarily heating the surface of a mold, comprising the steps of:

momentarily heating upper and lower molds by a variable electric resistance heater using current generated by a voltage generator after causing the upper and lower molds to come close to each other;

injecting molten casting material from a casting material feeder and molding it after raising the heated lower mold to and engaging the heated lower mold with the upper mold and allowing the molded product to cool in the close mold;

supplying compressed air from a compressed air supply line to the upper and lower molds through a compressed air supply line to cool a molded product; and

ejecting the molded product after cooling the molded product sufficiently.

4. The method according to claim 3, wherein said predetermined time period for which the upper mold and the core are heated is in a range of 1 to 60 seconds, said predetermined distances between the upper mold and the first core, between the first and second cores and between the second core and the lower mold while the core is heated are in a range of 1 to 40 cm, said predetermined distance between the mold and the voltage generator is in a range of 0.1 to 30 mm, said predetermined time period for which the core and the molded product are cooled by the cooling water is in a range of 5 to 300 seconds, and said predetermined distances between the upper mold and the first core and between the second core and the lower mold while the core and the molded product are cooled by the cooling water are in a range of 1 to 400 mm.

5. A method for momentarily heating the surface of a mold, comprising the steps of:

momentarily heating upper and lower molds by a coating type electric resistance heater using current generated by a voltage generator after causing the upper and lower molds to come close to each other;

injecting molten casting material from a casting material feeder and molding it after raising the heated lower mold to and engaging the heated lower mold with the upper mold and allowing the molded product to cool in the close mold;

supplying compressed air from a compressed air supply line to the upper and lower molds through a compressed air supply line to cool a molded product; and

ejecting the molded product after cooling the molded product sufficiently.

6. The method according to claim 5, wherein said predetermined time period for which the upper mold and the core are heated is in a range of 1 to 60 seconds, said predetermined distances between the upper mold and the first core, between the first and second cores and between the second core and the lower mold while the core is heated are in a range of 1 to 40 cm, said predetermined time period for which the core and the molded product are cooled by the cooling water is in a range of 5 to 300 seconds, and said predetermined distances between the upper mold and the first core and between the second core and the lower mold while the core and the molded product are cooled by the cooling water are in a range of 1 to 400 mm.

7. A product fabricated by the method according to claim 1.

8. A product fabricated by the method according to claim 2.

9. A product fabricated by the method according to claim 3.

10. A product fabricated by the method according to claim 4.

11. A product fabricated by the method according to claim 5.

12. A product fabricated by the method according to claim 6.

13. A system for momentarily heating the surface of a mold, comprising:

a casting material feeder for supplying molten casting material;

upper and lower molds for forming a predetermined shaped cast;

first and second cores disposed between the upper and lower molds;

a water-cooled system for cooling a heated mold by injecting cooling water to the heated mold;

an injection molding control for controlling the upper and lower molds;

an air and gaseous fuel mixture and supply unit for supplying compressed air and gaseous fuel simultaneously;

a gaseous fuel mixture and supply control for controlling the operation of the air and gaseous fuel mixture and supply unit;

an interface for interfacing the injection molding control and the gaseous fuel mixture and supply control; and

a control panel for visually displaying the control, condition and operation of the components of the system.

14. The system according to claim 13, further comprising,

a gaseous fuel supply conduit for supplying to upper and lower molds air or mixed gaseous fuel supplied through an air and gaseous fuel mixture and supply unit, and

a plurality of conduits for supplying an air and gaseous fuel mixture through the upper and lower molds.

15. A system for momentarily heating the surface of a mold, comprising:

a casting material feeder for supplying molten casting material;

upper and lower molds for forming a predetermined shaped cast;

first and second cores disposed between the upper and lower molds;

a water-cooled system for cooling a heated mold by injecting cooling water to the heated mold;

an injection molding control for controlling the upper and lower molds;

a voltage generator for generating voltage of a predetermined level;

a variable electric resistance heater for heating the cores using current applied from the voltage generator, said a variable electric resistance heater being disposed between the upper mold and the first core;

a controller for controlling the compressed air supply line and the voltage generator;

an interface for interfacing the injection molding control and the gaseous fuel mixture and supply control; and

a control panel for visually displaying the control, condition and operation of the components of the system.

16. A system for momentarily heating the surface of a mold, comprising:

a casting material feeder for supplying molten casting material;

upper and lower molds for forming a predetermined shaped cast;

first and second cores disposed between the upper and lower molds;

a water-cooled system for cooling a heated mold by injecting cooling water to the heated mold;

an injection molding control for controlling the upper and lower molds;

a voltage generator for generating voltage of a predetermined level;

a electric resistance heater for heating the cores using current applied from the voltage generator, said a electric resistance heater being coated on the first core;

a controller for controlling the compressed air supply line and the voltage generator;

an interface for interfacing the injection molding control and the gaseous fuel mixture and supply control; and

a control panel for visually displaying the control, condition and operation of the components of the system.

17. The system according to any of claims 13, 15, 16, wherein said water-cooled system comprises,

cooling water passages are arranged through upper and lower molds, a cooling water supply conduit is connected to the cooling water passages, an electronic valve is positioned on the cooling water supply conduit to selectively open or close the cooling water supply conduit, and a motor pump is positioned on the cooling water supply conduit to supply cooling water through the cooling water supply conduit.

18. The system according to claim 16, wherein said coat of the electric resistance heater is formed by coating the upper surface of the first core primarily with a first insulating layer, coating the first insulating layer with an electric resistance layer and coating the electric resistance layer secondarily with a second insulating layer.

19. A product fabricated by the system according to claim 13.

20. A product fabricated by the system according to claim 14.

21. A product fabricated by the system according to claim 15.

22. A product fabricated by the system according to claim 16.

23. A product fabricated by the system according to claim 17.

24. A product fabricated by the system according to claim 18.